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THE UNITED STATES PUBLIC HEALTH SERVICE AS A CAREER

BY

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When the young medical man receives his diploma, the problem which usually confronts him is the selection of the hospital in which to serve his interneship. The next thing is to get the interneship. Having completed his service in the hospital, a similar problem, and one which is of vastly greater importance, stares him in the face. He must decide what line of medical activity he wishes to make his life work. Having arrived at this decision, he has to get to work. Too frequently he is blinded by the brilliancy of the medical and surgical staff of the hospital, and enters upon his career firm in the belief that he will shortly acquire a lucrative practice and an enviable position. He dreams of the chair in his alma mater, large consultant fees, and a busy life of usefulness. Blessed be those dreams, made in ignorance of the many trials which await the man of limited experience and inadequate financial backing. Frequently the struggle for existence is so hard that the dream must be put aside for the necessity of "money grubbing."

The Government offers to young medical men the choice of three careers: The United States Public Health Service, the Medical Corps of the Army, and the Medical Corps of the Navy. Each of these has its special advantages, and in any one of them the physician of good basic training and the ability and willingness to work may make a success which will reflect credit upon himself and be of lasting good to the Nation. It is only with the first of these careers that this article intends to deal.

In all of these branches of governmental activity there is a moderate income and relief from the vexation of bill collecting. In none of them is there opportunity to amass wealth. These positions are honorable ones, there is ample provision for the needs of old age, and when disease or injury incapacitates the medical officer the income does not cease. These are important considerations. Furthermore, the services endeavor to stimulate original research by officers, and there is, therefore, great opportunity for professional advancement. Odd as it may seem, there is more freedom in the medical services of the Government than in private practice. The

medical officer knows exactly who may and who may not give him orders. The civilian physician in general practice is more or less at the beck and call of his patients. The medical officer may have a definite vacation each year without loss of income. The doctor in private practice may be able to absent himself from his work for purposes of study or recreation, but when he does so his income ceases.

On the other hand, a commission in one of the medical services is not a sinecure, and, like every profession, it has many unpleasant features. The lack of a fixed dwelling place, the separation at times from one's family, the hazards of disease and war, are all serious drawbacks. The frequent changes of station interfere with the education of the children of the family. Their playmates and associates undergo a constant shifting, thus taking away those deep friendships of youth which are frequently such an asset in later life. The lack of a fixed abiding place is not only a hindrance to family life; it is also a deterrent to profitable investment, because few care to lay out funds with the feeling that they will not be on the ground to watch the progress of the venture. These are all matters of considerable moment which should be carefully considered before taking the decisive step.

The Public Health Service has a broad and varied field of work, including the care of the sailors of the merchant marine in the United States Marine hospitals, the examination of arriving alien immigrants at ports of entry, service at sea on board Coast Guard cutters, the conduct of national quarantine stations, the prosecution of campaigns against epidemic disease, the carrying out of research work in the Hygienic Laboratory, and the study of the various factors in the protection of the public health in all parts of the Nation. In time of war, officers may be ordered by the President to duty with either the Army or the Navy. The officers of the Public Health Service are commissioned by the President by and with the advice and consent of the Senate, and their continuance in office is dependent only on their good behavior and attention to duty. Persons desiring to enter the Public Health Service must be between 23 and 32 years of age, citizens of the United States, graduates of a reputable medical college, and they must have served in a hospital for one year, or engaged in private practice for not less than two years.

The right to be recommended for a commission in the United States Public Health Service is determined by a thorough examination before a board of medical officers. In order to appear for this examination, candidates must be invited by the Surgeon General of the service. To secure this invitation, the candidate must fill out a blank stating his name, age, place and date of birth, his marital condition, the college from which he is graduated, and his height and

weight. He must also certify that he is free from any ailment which would disqualify him for service in any climate. The application should be accompanied by at least two recommendations as to the character and professional ability of the candidate, one of which must be signed by a physician.

Examinations are held in various parts of the United States, and consist of a thorough physical examination, an oral examination in the various branches of general education, and a professional examination in writing in the following branches: Anatomy, physiology, chemistry, materia medica and therapeutics, practice of medicine, surgery, obstetrics and diseases of women, pathology and bacteriology, and hygiene and sanitation. A clinical examination is also given in which medical and surgical cases are examined by the candidate, their histories written, the diagnosis established, and the treatment outlined. As a part of the examination in pathology and bacteriology certain microscopic preparations must be identified. Candidates are required to make a general average of 80 per cent in all branches. In case of rejection, another opportunity may be given to take the examination at the expiration of one year.

Candidates who are invited to appear report to the chairman of the examination board at a certain hour on a specified day, usually at 10 a. m. on a Monday. The board of examiners makes a record of the name, age (in years and months), nativity, marital condition, the number of children of the candidate, the diseases from which he has suffered, and the effect which they have had upon his general health. Careful inquiry is also made into his family history to determine whether or not the candidate has any inherited tendency toward disease or conditions which might incapacitate him for active service.

The candidate is then required to strip. The height and weight are recorded and the examiners note the general appearance and complexion. There then follows a careful examination of the skin, hair, superficial glands, head, face, speech, eyes, eyelids, eyesight, color sense, ears, hearing, nose, teeth, palate, fauces, neck, chest, lungs, heart, scrotum, testicles, penis, anus, spine, the reflexes, upper and lower extremities, agility, temperature, and evidence of successful vaccination within five years. The urine is also tested, a microscopic examination of the blood is made, and the Wassermann test performed. In the event that there is reason to believe or suspect the presence of animal parasites there may also be made an examination of the stools. It is thus seen that physical soundness is a prerequisite. Should the board of examiners find that the candidate is not up to the physical standard, it terminates his examination.

The candidate is next required to write a short autobiography, in which he states concisely whether he is married or single; the date and place of his birth; the school, institution, or college at which

he received his general education, the several branches studied, including his knowledge of general literature and of the ancient and modern languages; the exact title of the medical school or schools at which he received instruction and the date of his graduation; the time when he commenced the study of medicine; the opportunities he has had of engaging in the practice of medicine, surgery, and obstetrics, or of receiving clinical instruction; whether he has been a resident physician or interne in a civil or military hospital, and the opportunties which he has had for doing public-health work. The candidate is required to append to this statement his name in full, his post-office address, and his local address at the date of the examination.

The candidate is then given an oral examination lasting about one hour in the general common school and college branches. The board has previously looked over the autobiography of the candidate, and unless he claims special knowledge of the languages and higher sciences he is not examined in these. If, however, the candidate desires to demonstrate to the board his proficiency in any foreign language or higher science, he may do so, and the board will give him credit for this. The idea of the oral examination is not entirely to discover what the candidate does or does not know, but also to determine the character of his mental processes, whether he has the ability to think quickly and act quickly, and whether he has been using his brain for the purpose of memorizing things or to think with. Questions are asked in American history, of which the following may be quoted as examples:

The voyages of Columbus; early explorations; Ponce de Leon; the Cabots; Hudson; Verrazani; the early settlers; the Roanoke Colony; Oglethorpe; the Massachusetts Bay Colony; Miles Standish, etc.; the causes which led up to the Revolution; principal battles; the War of 1812; exploration and settlement of the western territories; accessions of the United States; the Mexican War; the Civil War; battles and commanders; general movements in the various years thereof; the War with Spain; and the like.

Of course, the candidate may be asked only one-half the questions, but he should be relatively familiar with the entire subject of American history, because questions may be propounded on almost any phase of the subject.

The examination in general history is broader. The examiners do not expect candidates to know the exact dates at which the Punic wars occurred, but if the candidates show that their schooling has really educated them, it will naturally count in their favor. Again it may be stated that this preliminary examination is for the purpose of determining the candidate's ability to use his brain for the purpose of reasoning. For example, the candidate is usually asked some questions regarding current events, not with the idea that he

should know the exact state of affairs in the Balkans, but to show whether he is a man whose interests in general matters are live and keen.

For the same reason questions are asked in geography (this is of importance also because of the maritime work of the Public Health Service), such as:

How would you go by water from Libau, Russia, to Funchal? Where are the Straits of San Juan de Fuca? Name the principal ports on the western coast of South America. What are the principal products of Costa Rica?

Questions are then put in general literature, principally American literature. For example:

Who composed the "Concord School"? Who wrote "Snow Bound," the "Bigelow Papers," and "Roughing It"? Name some of the works of William Dean Howells, Thomas Nelson Page, Rudyard Kipling. Who wrote the "Cotter's Saturday Night," the "Lay of the Last Minstrel," etc.?

None of the questions are catch questions.

Most of the candidates have received instruction in physics. Questions like the following are given:

What is heat? What is ether? What is a spectrum? What is the difference between the red end and the violet end of the spectrum? What is sound? What is the X-ray? What are levers? What are pulleys? What keeps the pendulum going? What is gravity? What makes the steam engine go?

The questions are practical.

Candidates are rarely asked to state the various laws in physics, but once in a while a question may be put to determine if the candidate has a knowledge of the practical application of such laws, for example, Avogadro's law.

The written examination then commences. As will be seen by the following, the questions are broad and are calculated to give the candidate ample opportunity to demonstrate his real understanding of the subject. A premium is not put on parrotlike memory, and candidates may show their judgment as to the relative value of certain facts by employing essentials and omitting nonessentials. Below are given a number of questions which have been asked in recent years. Usually five or six questions are given on each branch. The order in which the different branches are given below is that usually followed during the examination.

ANATOMY.

1. Describe the antrum of Highmore.
2. Give the surgical anatomy of the thyroid gland.
3. Describe the microscopic anatomy of the pancreas.
4. Describe the branches of the internal iliac artery.
5. Describe the optic nerve.

1. Describe the tibia.
2. Describe the shoulder joint.
3. Describe the external oblique muscle of the abdomen.
4. Describe the right phrenic nerve.
5. Describe the duodenum and give its relations.
6. Describe the circle of Willis.

1. Describe the bony landmarks of the elbow and discuss their surgical significance.
2. Describe the arterial supply of the stomach.
3. Describe the musculo-spiral nerve.
4. Define the following terms: (*a*) Rudimentary structure, (*b*) cuneiform, (*c*) synarthrosis, (*d*) aponeurosis, (*e*) end artery.
5. Describe the male urethra.

1. Name the branches of the following arteries: Femoral, radial, and external carotid.
2. Give the origin, insertion, and nerve supply of the following muscles: Deltoid, Gluteus maximus, and Subscapularis.
3. Describe the rectum.
4. Name the arteries which supply the large intestine.
5. Draw a rough diagram showing the arrangement of the sympathetic nervous system.
6. Describe the thoracic duct, the Eustachian tube, and the external inguinal ring.

1. Describe the peritoneum.
2. Describe the clavicle.
3. Describe the ankle joint.
4. Describe the arterial supply of the palm of the hand.
5. Describe the sacral plexus.

1. Describe the humerus.
2. Describe the muscles of the leg.
3. Describe the axillary space.
4. Describe the pneumogastric nerve.
5. Describe the urinary bladder.

PHYSIOLOGY.

1. Discuss the functions of the hypophysis or pituitary body.
2. Discuss the physiology of pain.
3. Discuss proteid metabolism.
4. Discuss the physiology of color sense.
5. Discuss the nervous control of circulation.

1. Discuss the mechanical factors concerned in respiration.
2. Discuss the physiology of vomiting.
3. Describe normal urine.
4. Discuss the metabolism of sugar in the body.
5. Define the following terms: Perception, hallucination, invertase, polypeptids, Wallerian degeneration.

1. Describe the sounds of the heart and give their causes.
2. Discuss the differences between inspired and expired air.
3. Discuss the flow and functions of the lymph.
4. Discuss the functions of the pancreas and of the hypophysis cerebri.
5. Discuss briefly the regulation of the temperature of the human body.

1. Name chief chemical constituents found in the human body; and describe the proteins.
2. Describe the blood and give its functions.
3. Discuss gastric and intestinal digestion.
4. Discuss the physiology of the eye.
5. What is meant by "internal secretion"? Give three examples and discuss the same.
6. Describe the functions of the medulla.

1. Discuss fatigue.
2. Define the following terms: Katabolism; tidal air; mitosis; liquor sanguinis; muscle tonus; macula lutea.
3. Recommend a field ration for a soldier.
4. Discuss normal vision.
5. Describe the pancreatic juice and its action.

1. Define the following terms: (*a*) Osmosis; (*b*) apnoea; (*c*) hemianopsia; (*d*) methaemoglobin; (*e*) unorganized ferment; (*f*) caloric value; (*g*) neuron; (*h*) anabolism.
2. Discuss the function of the thymus gland.
3. Discuss the physiology of intestinal movement.
4. Outline briefly the functions of the columns of the spinal cord.
5. What are the factors concerned in maintaining blood pressure?

CHEMISTRY.

1. Define and give an example of each of the following terms: Acid, base, salt, hydro-carbon, carbohydrate, alcohol, aldehyde, ketone, ether, and ester.
2. Write the equations representing the reactions between sodium hydroxide and hydrochloric acid, and between potassium hydroxide and sulphuric acid.
3. Define an alkaloid, give the general chemical relations of this class of substance and name three examples. Define a glucoside and give examples. What are "ptomaines"?
4. Name the compounds of arsenic and oxygen and give the principal tests for arsenic.
5. What chemical changes do the fats undergo in the process of digestion? Name the principal enzyme concerned in this process.
6. What is meant by the term "dialysis"? Where and how does the process occur in the physiology of the human organism? What are colloids, and how do they behave in the process of dialysis?
7. Describe the element potassium. What is its source? Name its salts which are used in medicine.

1. Discuss Mendelejeff's periodic law.
2. Mention the properties of alkaloids.
3. Discuss the organic acids.
4. Discuss the theory of electrolysis.
5. Discuss the chemistry of the manufacture of soap.

1. Mention three processes by which oxygen may be obtained. State physical and chemical properties of oxygen.
2. State the physical and chemical properties both of common and red phosphorus, and how you would detect a case of poisoning by phosphorus?
3. How does an alcohol radical differ from an acid radical? Mention general properties of organic acids.
4. How would you detect blood, indican, bile, and sugar in urine?
5. Define salt, base, radicle, alehyde, ester, hydroxid, -ous, -ic, acids, -ite, -ate salts, and ketone.

1. Define the terms ion, atom, molecule, acid, base, salt, and chemical affinity.
2. Discuss the properties and uses of chlorine.
3. Discuss the chemistry of the digestion of proteids.
4. Discuss vinous fermentation.
5. Give graphic formula, properties, and uses of formaldehyde.

1. State the chemical formula of the following substances: Phenol, tartaric acid, iodoform, potassium chlorate, acetic acid, laughing gas, and boric acid. Identify and give the common name of the following: HI, CH_3OH, $C_{12}H_{22}O_{11}$, $KHCO_3$, NA_2SO_4, $BIONO_3$.
2. Mention the substances which enter into the composition of explosives.
3. Describe chlorine and give its uses. Name its compounds.
4. What are alloys, amalgams, alcohols, sulphites, halogens, alkaloids, and double salts?
5. Give one of the tests for strychnine.
6. Describe the manufacture of chloroform, of ether, of calomel.

1. Discuss the determination of lead in water.
2. Give the differential tests for arsenic.
3. Describe, with formulæ, the manufacture of sulphuric ether.
4. Discuss the atomic theory.
5. Discuss the chemical purification of water.

1. What is copperas chemically, chloral, ammoniated mercury, gypsum, glycerin, tartar emetic, oil of wintergreen?
2. Give the properties and describe the methods of preparation of formaldehyde.
3. To what is the hardness of water due and how is it determined?
4. Give physical and chemical tests for the determination of the presence of blood.
5. Describe the manufacture of sulphuric acid.

MATERIA MEDICA.

1. Name the anthelmintics, giving the dosage and method of administration of each.
2. Discuss the physiologic and toxic action of ergot.
3. Give the properties, action, and dosage of the drugs used to render the urine less acid.
4. Discuss actino-therapy.
5. What is antimeningococcus serum, and how is it used?

1. What are antipyretics, hypnotics, mydriatics, hemostatics? Give a few examples of each.
2. Name at least six animal extracts used in medicine, and give the uses and doses of each.

3. Discuss the principles involved in vaccine therapy; indicate how such preparations are made and used.
4. What is digitalis, arsenic, nux vomica? Give preparations of each, physiological action, and doses.
5. Classify the cathartics, mention one of each and give its action and dose.

1. Give the dietetic and medicinal treatment of gastric ulcer.
2. Name the narcotics, cardiac stimulants, and alteratives.
3. Discuss radium therapy.
4. Give the dosage of the following substances: Sodium cacodylate, Donovan's solution, apomorphine, tartar emetic, pituitrin, tuberculin, and thymol.
5. Discuss the therapeusis of pediculosis capitis and corporis.
6. Give the preparations and doses of belladonna.
7. Outline the treatment for morphine addiction.

1. Give the official preparations of iodine, with their dosage in metric system, giving the physiological action of the iodides.
2. Give the dose, physiological action, and therapeutic use of camphor, caffeine, nitrite of amyl, and nitroglycerin.
3. Give the source, constituents, official preparations, dosage, and physiological action of digitalis.
4. Give symptoms and treatment in a case of poisoning by carbon monoxide, bichloride of mercury, and morphine.
5. Name the official preparations of iron, with their dosage.

1. Name and give doses and physiological action of three good preparations of iron.
2. Discuss the physiological action and the therapeutic uses of digitalis.
3. Discuss the preparation, physiological action, therapeutic uses, and dosage of diphtheria antitoxin.
4. Discuss dosage and therapeutics of urotropin.
5. Give the chemical and physiological antidotes for poisoning by (*a*) carbolic acid, (*b*) hydrocyanic acid, (*c*) lye, (*d*) morphine, (*e*) poisonous mushrooms.

1. Discuss the public health significance of the habit-forming drugs.
2. Give the dosage of the following drugs: (*a*) Potassium bromide, (*b*) noesalvarsan, (*c*) extract of cannibis indica, (*d*) scopolomine hydrobromate, (*e*) oil of chenopodium, (*f*) Fowler's solution, (*g*) sparteine sulphate.
3. Give the origin, composition, physiological action, and therapeutic uses of physostigma.
4. Discuss the treatment of cough in pulmonary tuberculosis.
5. Describe in detail the method which you would choose for administering a general anesthetic for a formal abdominal operation.

PRACTICE OF MEDICINE.

1. Discuss epidemic anterior poliomyelitis.
2. Discuss the etiology, pathology, symptoms, and treatment of endemic goitre.
3. Discuss arteriosclerosis.
4. Give differential diagnosis between conjunctivitis, iritis, keratitis, and acute trachoma.
5. Describe the causative organism of yaws, elephantiasis, whooping cough, tetanus, and leprosy.

1. Discuss arteriosclerosis.
2. Discuss pellagra.
3. Discuss Hodgkin's disease.
4. Discuss the prognosis and treatment of diseases of the aortic valve of heart.
5. Discuss locomotor ataxia.

1. Give the differential diagnosis of smallpox.
2. Give the symptoms of locomotor ataxia.
3. Describe the blood picture in leukæmia.
4. Discuss pyorrhoea alveolaris.
5. Name the conditions of the circulatory and nervous systems due to syphilis.
6. Classify and differentiate the anemias.

1. Give the pathology, differential diagnosis, and treatment of typhoid fever.
2. Discuss the etiology, pathology, and treatment of chronic constipation.
3. Give the differential diagnosis of variola.
4. Discuss the etiology, pathology, diagnosis, and treatment of chronic Bright's disease.
5. Discuss the epidemiology, etiology, pathology, differential diagnosis, and treatment of cerebrospinal fever.

1. Give the symptoms and diagnosis of congenital syphilis.
2. Describe and give the differential diagnosis of chicken pox.
3. Discuss the treatment of uræmia.
4. Discuss manic-depressive insanity.
5. Define tabes mesenterica, hemophilia, intention tremor, nystagaus, egophony, bruit, and heart block.

1. Discuss diphtheria.
2. Give etiology, pathology, symptoms, diagnosis, and treatment of trachoma.
3. Give briefly the symptoms, diagnosis, prognosis, and treatment of valvular lesions of the heart.
4. Name the intestinal parasites, giving diagnosis and treatment of any one of them.
5. Discuss dementia precox.

1. Classify and give a brief description of the various forms of mental disease.
2. Discuss beriberi.
3. Give the differential diagnosis of acute pleurisy.
4. Give the blood picture in pernicious anemia.
5. Define (*a*) staphyloma, (*b*) erythema, (*c*) podagra, (*d*) formication, (*e*) ozena, (*f*) singultus, (*g*) strangury, (*h*) siriasis.

SURGERY.

1. Discuss the surgery of gastric carcinoma.
2. Classify and give the treatment for burns.
3. Discuss the surgical treatment of goiter.
4. Discuss the surgical treatment of liver abscess.
5. Discuss surgical treatment of fracture of the skull.

1. Give the treatment of inflammation.
2. Give the differential diagnosis of aneurysm.
3. Discuss the treatment of ununited fractures.
4. Discuss the public-health aspects of cancer.
5. Classify and give the treatment of dislocations of the shoulder joint.

1. Discuss the etiology, pathology, and treatment of shock.
2. Discuss the etiology, diagnosis, and treatment of abscess of the liver.
3. Discuss the treatment of fracture of the patella.
4. Give the differential diagnosis and the treatment of appendicitis, and describe in detail the operation of appendectomy.
5. Discuss briefly the diagnosis and treatment of dislocations of the hip joint.

1. Discuss tetanus.
2. Give the symptoms, physical signs, and treatment of tuberculosis of the peritoneum.
3. Describe the various methods of skin grafting.
4. Discuss the treatment of fistula in ano.
5. Discuss the surgical treatment of mastoiditis.

1. Give differential diagnosis and treatment of renal tuberculosis.
2. Give differential diagnosis and treatment of mammary carcinoma.
3. Give the differential diagnosis and treatment of gastric ulcer.
4. Discuss the treatment of ununited fractures.
5. Discuss the treatment of cleft palate.

1. Describe an operation for appendicitis; for inguinal hernia.
2. Describe how colostomy should be performed and state when the operation is required.
3. Outline the surgical treatment of popliteal aneurysm.
4. Give the differential diagnosis of cholelithiasis and appendicitis.
5. Discuss the treatment of gunshot wounds of the extremities.

OBSTETRICS AND DISEASES OF WOMEN.

1. How would you manage a breech presentation?
2. Discuss etiology and treatment of postpartum hemorrhage.
3. What is version and what are the indications for its performance?
4. What is salpingitis? Give the etiology and symptoms of this condition.
5. Give symptoms and treatment of chronic endometritis.

1. Discuss pelvic cellulitis.
2. Give the causes, symptoms, and treatment of phlegmasia alba dolens.
3. Name the conditions justifying abortion and describe how the operation may be performed.
4. Give the treatment of prolapse of the cord.
5. State the management of labor in left occipito-posterior position.

1. Describe the etiology of pelvic deformities.
2. Discribe the injuries which may occur to the child at the time of birth.
3. Describe the fœtal circulation and the changes which occur following birth.
4. Give the differential diagnosis of ovarian cyst.
5. Discuss the relation of age to the diseases of the female.

1. Discuss the treatment of hemorrhage of the newborn.
2. Discuss the management of breech presentation.
3. Discuss gonorrheal infection in the female.
4. Give the diagnosis and treatment of mastitis.
5. Define the following terms: (*a*) Metrorrhagia, (*b*) corpus luteum, (*c*) allantois, (*d*) episiotomy, (*e*) metritis, (*f*) phlegmasia alba dolens.

HYGIENE.

1. Discuss the relation of household vermin to the spread of disease.
2. Discuss the control of measles.
3. Discuss the causes and prevention of plumbism.
4. How is the pasteurization of milk accomplished and what are its advantages?
5. What measures should be adopted for the prevention of mental diseases?

1. Discuss the prevention of typhoid fever.
2. Explain the geographical and social distribution of the following diseases: (*a*) Yellow fever, (*b*) uncinariasis, (*c*) typhus fever, (*d*) dengue, (*e*) taeniasis.
3. How would you determine the purity of a water supply for domestic consumption?
4. What are the public-health duties of a practicing physician?
5. Discuss oral hygiene.

1. Discuss the etiology, epidemiology, and prevention of hookworm disease.
2. Name the principal diseases transmitted by insects and give name and principal breeding places of insects concerned.
3. Describe in detail the proper construction, heating, and ventilation of a hospital ward for 20 patients.
4. Discuss briefly the best measures for the purification of a city's water supply obtained from a sewage-polluted river.
5. Discuss the measures for the control of an outbreak of scarlet fever in an institution containing 200 children.

1. Discuss the methods to be used for the prevention of uncinariasis.
2. What physical defects should be looked for in an examination of school children?
3. Why should municipal health authorities exercise control over ice-cream supplies?
4. Describe the methods to be adopted to prevent infection following the removal of a case of smallpox from a hotel bedroom.
5. How long should patients afflicted with the following diseases be under the control of the health officer: Measles, typhoid fever, diphtheria, chicken pox, whooping cough, and yellow fever?
6. State in detail the measures to be instituted for the control of malaria.

1. Discuss soil and disease.
2. Discuss the various methods of disinfecting.
3. What three epidemics can be carried by drinking water? Discuss the means employed for preventing their spread.
4. What effect has vitiated air on the system? Discuss air as a carrier of infection.
5. Name the normal constituents of cow's milk and what means are employed in the preservation of milk.

1. Discuss the general principles underlying the construction of a diet for a healthy man at ordinary labor.
2. How would you manage an epidemic of smallpox in a town of 50,000 inhabitants?

3. Discuss proper methods of sewage disposal for a town of 25,000 which forms one of a group of communities on a navigable stream.
4. Describe what you regard as the best method of ventilating and heating a general hospital of 30 beds in a temperate climate.
5. Name and describe five efficient processes of disinfection.

1. Describe in detail the steps which you would take to eradicate malaria from a rural community.
2. In making a sanitary inspection of a paint factory, what factors would you take into consideration?
3. Discuss briefly the basic factors in the epidemiology of tuberculosis.
4. How would you dispose of the wastes of a small town?
5. State what should be required of dairies to provide a sanitary milk supply.

PATHOLOGY AND BACTERIOLOGY.

1. Describe the gross pathology of epidemic cerebrospinal meningitis.
2. Name and classify the causative agent of the following diseases: Favus, whooping cough, yaws, hydatid disease, malaria, smallpox, and dysentery.
3. Discuss the various forms of cell degeneration.
4. Discuss serum sickness.
5. Discuss the acid fast group of bacteria.

1. What is meant by immunity, anaphylaxis, agglutinins, lysins, hemolysins, toxins, antitoxins, phagocytosis, and opsonins?
2. Give the morphological, cultural, and tinctorial characteristics of the causative agent of typhoid fever.
3. Describe briefly the gross and microscopic pathology of typhoid fever.
4. Describe four animal parasites occurring in the intestinal canal.
5. Describe the various cells found in the blood and name the pathological conditions in which they may be increased or decreased.

1. Describe the gross pathology of amoebic dysentery.
2. Describe the cellular pathology of a boil.
3. Give the technique of the Wasserman test.
4. Describe the morphology, cultural, tinctorial, and pathogenic qualities of the following organisms: (*a*) Plasmodium vivax, (*b*) anthrax bacillus, (*c*) cholera vibrio.

1. Describe the causative organism—
   (*a*) Tetanus.
   (*b*) Tuberculosis.
   (*c*) Typhoid fever.
2. Give the pathology of the inflammations of the mastoid process.
3. Give the pathology of uncinariasis.
4. Describe the routine methods of bacteriological examination of water.

1. Give a classification of tumors.
2. Discuss the etiology and pathology of favus.
3. Describe in detail the bacteriological diagnosis of Asiatic cholera.
4. Discuss the morphology, the most important cultural characteristics, and the pathogenesis of the plague bacillus.
5. Discuss the pathology of lobar pneumonia.

1. What causes the following diseases: Actinomycosis, mycetoma, relapsing fever, haemoglobinuria, dengue, trichiniasis, favus, sprue, and filariasis?
2. How would you detect tubercle bacilli in the sputum? In the urine?
3. Give the pathology of human plague.
4. Give the cultural characteristics of the typhoid bacillus.
5. Give the pathology of yellow fever.

1. How would you make a bacteriological diagnosis of typhoid fever, tubercle of the lung, and gonorrhea?
2. Discuss the pathology of atrophic cirrhosis of the liver.
3. What is meant by fatty degeneration, cloudy swelling, and amyloid degeneration? Describe each of these conditions.
4. What is a gumma? Give its pathology.
5. Discuss the pyogenic microorganisms.

After passing the examination, the successful candidates are recommended to the President for commission. The President in turn nominates the young physician to the Senate. After the names have been confirmed by the Senate, the candidates become assistant surgeons. The pay in this rank is $2,000 per annum, and when serving where quarters are not provided by the Government, commutation therefor at the rate of $30 per month is received; in other words, $2,360 per annum, or the equivalent thereof, is the salary. Young officers are usually assigned to some large station, such as a marine hospital, for a time, the first 18 months of duty being arranged in the following order and periods of time: United States marine hospitals, three months; quarantine stations, four months; immigration stations, five months, and Hygienic Laboratory, six months. In this way the officer becomes thoroughly familiar with the various branches of the service, and at the same time the service finds out a good deal about the line of work for which he is best fitted.

At the end of four years' service an assistant surgeon comes up for examination for promotion to the grade of passed assistant surgeon. This examination consists of three parts: A, physical; B, record while in the service; and C, professional. The professional examination consists of written and practical tests in the following branches: (1) Practice of medicine, (2) practice of surgery, (3) obstetrics and diseases of women, (4) hygiene, (5) epidemiology, (6) pathology and bacteriology, and the regulations of the service. In order to be recommended for promotion, an average grade of 80 per cent must be received and not less than 70 per cent in any of the written branches. Should a candidate for promotion fail to achieve the required grade, he will be eligible for reexamination at the expiration of one year, but should he again fail he is not allowed a third examination and will be reported to the Secretary of the Treasury as not qualified for promotion. An assistant surgeon so reported is requested to tender his resignation. Such a condition

occurs very rarely, however. Having been promoted, he will receive pay at the rate of $2,400 per annum, with commutation at the rate of $40 per month, or an annual pay of $2,880, or the equivalent thereof. At the end of 5 years' service an additional 10 per cent of the base pay is allowed, and for each 5 years thereafter up to 20 years' service an additional 10 per cent is added to the base pay. This is called a longevity increase, and the maximum which may be received by reason of this addition is as follows: Assistant surgeon general, $5,000; senior surgeon, $4,500; surgeon, $4,000.

Passed assistant surgeons at the expiration of 12 years' commissioned service are eligible to examination to determine their fitness for promotion to the grade of surgeon. This examination consists of (*a*) physical, (*b*) record while in the service, and (*c*) professional. The latter consists of examinations in writing on the practice of medicine, surgery, hygiene, hospital and quarantine management, and the regulations of the service. Candidates for promotion must also show themselves thoroughly familiar with the various publications of the service. In addition to the foregoing, candidates must prepare prior to the examination a thesis of not less than 5,000 words on some professional subject of their own selection. This thesis is presented to the board at the time of the examination. If a passed assistant surgeon is so unfortunate as to fail in his first examination for promotion to the grade of surgeon, he is not given another examination until the expiration of one year. If he should fail in this second examination, he is carried on the roster of the service as not in line of promotion. The basic pay of surgeons is $3,000 per annum, with commutation at the rate of $50 per month and longevity increases.

When vacancies occur in the grade of senior surgeon the ranking surgeon is ordered before a board, which gives him a thorough physical examination and a written examination to determine his proficiency in the regulations and familiarity with the publications of the service. In addition, candidates for promotion to senior surgeon are required to present a thesis of not less than 5,000 words. Should a candidate for promotion to the grade of senior surgeon fail, he is allowed a second examination when the next vacancy occurs. If, however, he fails in this examination, he is carried in the official roster of the service as not in line of promotion.

An officer receives one month's leave during each year, and he may accumulate this leave to the amount of four months. He is also granted sick leave when taken ill in line of duty. Should be become unable by reason of disease or accident, not the result of dissipated habits, to perform his duties, he is, after the expiration of his ordinary and sick leave, carried on "Waiting orders" status. Officers on waiting orders receive three-fourths of their pay.

As regards the expenses incident to the service, it may be stated that stations are supplied with medical books and periodicals, and there is no necessity for the officer purchasing these or the instruments of his profession. He is, however, obliged to own and keep in good condition a set of uniforms, the initial cost of which is approximately $350. When traveling on official duty actual expenses are met by the Government.

From the foregoing it is evident that the United States Public Health Service offers a varied career of infinite possibilities for the man who loves his work. The career is a hard one, and should not be attempted by a person with the idea that he will try it for a few years, accumulate a little money, and then go into private practice. Neither should it be followed by one who is desirous of obtaining wealth. If one is willing and anxious to do the work for the work's own sake, it is a pleasant and useful career. Unless one is willing to do this he would do well to direct his efforts in other fields.

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